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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Atsushi Yoshizawa

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EXAMINER

BODDIE, WILLIAM

ART UNIT

PAPER NUMBER

2629

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/758,531	YOSHIZAWA ET AL.	
	Examiner	Art Unit	
	William Boddie	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/16/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Hattori et al. (US 5,912,649).

With respect to claim 15, Hattori discloses, a method of making a three-dimensional (col. 1, lines 31-34 discloses, the creation of depth in the display) displaying apparatus, comprising:

providing a front display unit (10 in fig. 1);

providing a rear display unit (20 in fig. 1);

connecting the front display unit with the rear display unit by a spacer (3 in fig. 1) such that a display screen of the front display unit is parallel to a display screen of the rear display unit (clear from fig. 1).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al. (US 5,912,649) in view of Pichler (US 5,929,562).

With respect to claim 1, Hattori discloses, a three-dimensional image displaying apparatus (col. 1, lines 31-34 discloses, the creation of depth in the display) comprising:

a front display unit (10 in fig. 1, for example) having at least one transparent display screen (13 for example in fig. 1), the at least one transparent display screen including a plurality of electroluminescent elements (col. 2, lines 40-44; also note the EL elements in figs. 5 and 6);

a rear display unit (20 in fig. 1) located behind the front display unit (clear from fig. 1) and having a display screen (23 for example in fig. 1); and

a spacer (3, 4 in fig. 1) connected between the front display unit and the rear display unit.

Hattori does not expressly disclose that the electroluminescent elements are organic.

Pichler discloses, a display device having multiple display units (fig. 3a) each of which are organic electroluminescent displays (col. 1, line 66 – col. 2, line 2).

Pichler and Hattori are analogous art because they are both from the same field of endeavor namely multi-unit electro-luminescent displays.

At the time of the invention it would have been obvious to one of ordinary skill in the art to construct the electro-luminescent displays of Hattori out of organic material as taught by Pichler.

The motivation for doing so would have been the well-known benefit of decreased cost to manufacture organic EL elements.

Therefore it would have been obvious to combine Pichler with Hattori for the benefit of manufacturing costs to obtain the invention as specified in claim 1.

With respect to claim 2, Pichler and Hattori disclose, the three-dimensional image displaying apparatus according to claim 1 (see above).

Hattori further discloses, wherein the spacer prevents transmission of gas (col. 2, lines 58-63).

With respect to claim 7, Pichler and Hattori disclose, the three-dimensional image displaying apparatus according to claim 1 (see above).

Pichler further discloses, wherein the front display unit includes a first organic functional layer and the rear display unit includes a second organic functional layer (col. 4, lines 16-21; also see col. 3, lines 1-5).

With respect to claim 8, Pichler and Hattori disclose, the three-dimensional image displaying apparatus according to claim 1 (see above).

Hattori further discloses, wherein the spacer is hermetically connected between the front display unit and the rear display unit (col. 2, lines 58-63).

With respect to claim 9, Pichler and Hattori disclose, the three-dimensional image displaying apparatus according to claim 7 (see above).

Hattori further discloses, wherein the spacer has a hollow space (4 in fig. 1) and at least one of the first and second EL functional layers (13 and 23 in fig. 1) is located in the hollow space of the spacer (clear from fig. 1).

With respect to claim 10, Pichler and Hattori disclose, the three-dimensional image displaying apparatus according to claim 9 (see above).

Hattori further discloses, wherein at least one of the first and second organic layers is covered with a sealing device (col. 2, lines 61-63; the sealing device in Hattori's disclosure is a silicone oil).

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al. (US 5,912,649) in view of Pichler (US 5,929,562) and further in view of Pecile et al. (US 4,829,213).

With respect to claim 3, Hattori and Pichler disclose, the three-dimensional image displaying apparatus according to claim 1 (see above).

Neither Hattori nor Pichler expressly disclose, wherein the spacer is a cylindrical member.

Pecile discloses, wherein a spacer (20 in fig. 3) between two sides of an electroluminescent device is a cylindrical member (clear from fig. 2-3).

Art Unit: 2629

Pecile, Hattori and Pichler are analogous art because they are all from the same field of endeavor namely, design and construction of the layers of an electroluminescent display device.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the sealing spacer of Pichler and Hattori with the cylindrical spacer taught by Pecile for the benefit of simplifying the device manufacturing (Pecile; col. 4, lines 57-60).

Therefore it would have been obvious to combine Pecile with Pichler and Hattori for the benefit of simplified manufacturing to obtain the invention as specified in claim 3.

7. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al. (US 5,912,649) in view of Pichler (US 5,929,562) and further in view of Suntola et al. (US 4,396,864).

. **With respect to claims 4 and 11**, Pichler and Hattori disclose, the three-dimensional image display apparatus according to claim 1 (see above).

Neither Pichler nor Hattori expressly disclose, wherein the spacer is a transparent solid plate member.

Suntola discloses, an multi-unit electroluminescent display that comprises a transparent solid plate member (5 in fig. 1 and 1,5 in fig. 2; col. 2, line 63 – col. 3, line 6) as a spacer.

Pichler, Hattori and Suntola are analogous art because they are all from the same field of endeavor namely, multi-unit electro-luminescent displays.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the spacer of Pichler and Hattori with the transparent solid plate spacer taught by Suntola for the benefit of simplifying the manufacturing process, in not requiring the inserting of silicon oil into the display device.

Therefore it would have been obvious to combine Suntola with Pichler and Hattori for the benefit of a simpler manufacturing process to obtain the invention as specified in claims 4 and 11.

8. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al. (US 5,912,649) in view of Pichler (US 5,929,562) and further in view of Urabe et al. (US 6,969,948).

With respect to claims 5 and 13, Pichler and Hattori disclose, the three-dimensional image displaying apparatus according to claim 1 (see above).

Neither Hattori nor Pichler expressly disclose, wherein the spacer has an antireflection characteristic.

Urabe discloses, an organic electroluminescent device (fig. 12) that comprises a sealing substrate (20 in fig. 12) with an antireflection film (24 in fig. 12).

Urabe, Hattori and Pichler are analogous art because they are all from the same field of endeavor namely, design and construction of the layers of an electroluminescent display device.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the antireflection coating taught by Urabe on the sealing spacer of Pichler and Hattori for the benefit of increased contrast (Urabe; col. 11, lines 61-62).

Therefore it would have been obvious to combine Urabe with Pichler and Hattori for the benefit of increased contrast to obtain the invention as specified in claims 5 and 13.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al. (US 5,912,649) in view of Pichler (US 5,929,562) and further in view of Kleinberger et al. (US 5,983,831).

With respect to claim 6, Hattori and Pichler disclose, the three-dimensional image displaying apparatus according to claim 1 (see above).

Neither Hattori nor Pichler disclose, wherein the spacer includes a mechanism for adjusting a width of the spacer to adjust a distance between the front display unit and the rear display unit.

Kleinberger discloses, a multi-unit display device (fig. 16) wherein a spacer (134 in fig. 16) includes a mechanism for adjusting a width of the spacer (col. 32, lines 28-30) to adjust a distance between a front display unit (112 in fig. 16) and a rear display unit (1 in fig. 16).

Pichler, Hattori and Kleinberger are analogous art because they are all from the same field of endeavor namely, multi-unit displays.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the movable mechanical means of Kleinberger in the display device of Pichler and Hattori for the benefit of added flexibility in the fixing distance of the active layer from the other layers (Kleinberger; col. 32, lines 41-47).

Art Unit: 2629

Therefore it would have been obvious to combine Kleinberger with Pichler and Hattori for the benefit of a added design flexibility to obtain the invention as specified in claim 6.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al. (US 5,912,649) in view of Pichler (US 5,929,562) and further in view of Barrow et al. (US 4,719,385).

With respect to claim 12, Pichler and Hattori disclose, the three-dimensional image display apparatus according to claim 1 (see above).

Neither Pichler nor Hattori expressly disclose, that the spacer includes a plurality of poles.

Barrow discloses, including a spacer (30 in fig. 2) between two displays (10 and 20 in fig. 2), wherein the spacer includes a plurality of poles (col. 2, lines 64-68).

Pichler, Hattori and Barrow are analogous art because they are all from the same field of endeavor namely, multi-unit electro-luminescent displays.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the spacer of Pichler and Hattori with the poles taught by Barrow for the benefit of maintaining the panels in close predetermined proximity (Barrow; col. 2, lines 66-67).

Therefore it would have been obvious to combine Barrow with Pichler and Hattori for the benefit of maintaining a predetermined distance between the display panels to obtain the invention as specified in claim 12.

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al. (US 5,912,649) in view of Pichler (US 5,929,562) and further in view of Taguchi et al. (US 4,945,009).

With respect to claim 14, Pichler and Hattori disclose, the three-dimensional image display apparatus according to claim 1 (see above).

Hattori further discloses, wherein the spacer is a hollow member (clear from fig. 1).

Neither Pichler nor Hattori expressly disclose, wherein the spacer is filled with an inert gas.

Taguchi discloses, a multi-panel EL display device (fig. 1) that is separated by a spacer (9 in fig. 1) with a hollow that is filled with an inert gas (nitrogen; col. 4, lines 23-25).

Pichler, Hattori and Taguchi are analogous art because they are all from the same field of endeavor namely, multi-unit electro-luminescent displays.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the silicone oil filling of Pichler and Hattori with the Nitrogen taught by Taguchi for the benefit that should the seal ever rupture, only an inert gas would leak, rather than a silicon oil.

Therefore it would have been obvious to combine Taguchi with Pichler and Hattori for the benefit of a more convenient leakage should the seal rupture to obtain the invention as specified in claim 14.

Art Unit: 2629

12. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al. (US 5,912,649) in view of Urabe et al. (US 6,969,948).

With respect to claim 16, Hattori discloses, the method according to claim 15 (see above), wherein the step of providing the front display unit includes providing an electroluminescent display screen made from a plurality of electroluminescent elements (col. 2, lines 40-44; also note the EL elements in figs. 5 and 6).

Hattori does not expressly disclose that the electroluminescent display screen is an organic electroluminescent display screen.

Urabe discloses, an organic electroluminescent display device (col. 1, lines 12-18) each of which includes organic electroluminescent elements (col. 3, lines 19-24).

Urabe and Hattori are analogous art because they are from the same field of endeavor namely, design and construction of the layers of an electroluminescent display device.

At the time of the invention it would have been obvious to one of ordinary skill in the art to construct the electro-luminescent displays of Hattori out of organic material as taught by Urabe.

The motivation for doing so would have been the well-known benefit of decreased cost to manufacture organic EL elements.

Therefore it would have been obvious to combine Urabe with Hattori for the benefit of manufacturing costs to obtain the invention as specified in claim 16.

With respect to claim 17, Hattori and Urabe disclose, the method according to claim 16 (see above).

Hattori further discloses, wherein the front display unit has at least one transparent display screen (note the ray traces for the rear display traveling through the front display screen in fig. 1), and the rear display unit is located behind the front display unit (clear from fig. 1).

With respect to claim 18, Hattori and Urabe disclose, the method according to claim 17 (see above).

Urabe further discloses, wherein the organic electroluminescent display screen includes an organic functional layer (14 in fig. 1) which has a light emitting layer (14c in fig. 2), and the light emitting layer emits light upon application of a current (col. 5, lines 16-18).

With respect to claim 19, Hattori and Urabe disclose, the method according to claim 18 (see above).

Hattori further discloses, wherein the front display unit is hermetically connected with the rear display unit by the spacer (col. 2, lines 58-63).

With respect to claim 20, Hattori and Urabe disclose, the method according to claim 19 (see above).

Hattori further discloses, including locating the organic functional layer in a hermetic confinement defined by the front display unit, spacer and rear display unit (clear from fig. 1).

Conclusion

Art Unit: 2629

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Will Boddie whose telephone number is (571) 272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

10/31/06
wlb

AMR A. AWAD
SUPERVISORY PATENT EXAMINER
